

APPENDIX I

GARRISON STORAGE OF FOG OIL

All smoke units in garrison, and possibly during war, will establish large fog oil dumps to support training and operations. This appendix will describe the proper techniques for storing fog oil to preclude environmental damage and to maximize the shelf life of the fog oil.

Set up, in the area, a separate stocking area for each product and type of package. If you have an area for each, you can easily inventory and control the stock. You are also less likely to incorrectly identify the product. Use a block system to separate large amounts of stored supplies so that the entire stock of one product is not lost if there is an enemy attack or a fire. Plan the exact layout according to local conditions and safety requirements (See Appendix F, Safety, for guidance).

55-GALLON DRUMS

Plan the layout of a stacking area for 55-gallon drums according to the type of product in the drums and the terrain. Petroleum products are classified as light-or low-flash (for example, fog oil, diesel fuel) and heavy or high flash (for example, MOGAS). Store low-flash and high-flash products in separate blocks. There should be 50 to 150 foot wide aisles between blocks. Blocks are made up of up to nine 70 square foot sections, and each section is divided into five parallel units with nine foot wide aisles between double rows of drums. You can reduce this aisle width to four feet if this leaves you enough room to handle the product. Rows of drums containing low-flash products must be no more than 35 drums long and three tiers high. A suggested, but not mandatory, layout of a stacking area for 55-gallon drums is at figure I-1.

STACKING FILLED 55-GALLON DRUMS

Stack drums horizontally in double rows with the closures (bungs and vents) facing the aisles at the 3 o'clock and 9 o'clock positions. Leave at least one foot of space between the double rows. This should be enough space to allow you to work with drum-handling attachments and to inspect drum butts and chimes. There are two basic methods of stacking drums--

- Nested Stacks.
- Dunnaged Stack.

55-GALLON DRUMS	I-1
STACKING FILLED 55-GALLON DRUMS	I-1
ISSUING PRODUCT	I-4

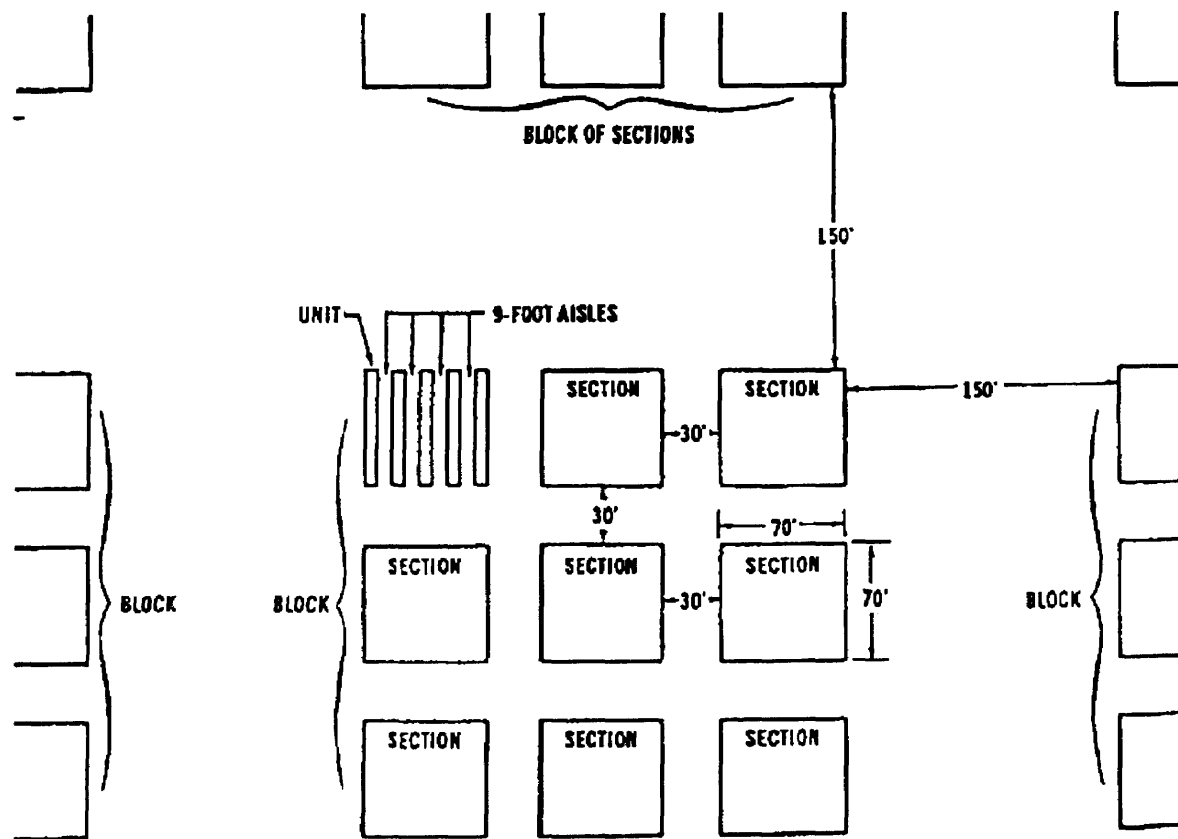


Figure I-1. Area layout.

Nested Stacks

- Lay out a 70-foot-square section, and then divide the section into five units. If you are storing a small number of drums you may use a smaller square.
- Make a foundation for each unit of drums by laying out four 70-foot rows of 2 by 6 inch lumber or other suitable dunnage. Stand the lumber on edge, attaching cross braces between the rows to hold the lumber in place, as in figure I-2.
- Build bracings at the ends of the rows to keep the drums from rolling or toppling (figure I-2).
- Lay 35 drums on their sides in each of the two rows to form the first tier. Place the drums in the rows with their bungs and vents facing the aisle, and leave at least one foot of space between the double rows. Ensure that the bungs and vents are in a horizontal line and below the surface of the liquid. This is known as flooding the bungs and vents, and it ensures a tight seal and cuts down on container breathing.
- Place a second tier on top of the first, and nest each drum between the two drums below it. Place the drums as outlined above. The finished unit contains 204 drums and a complete section of five units contains 1,020 drums.

Nested Stack

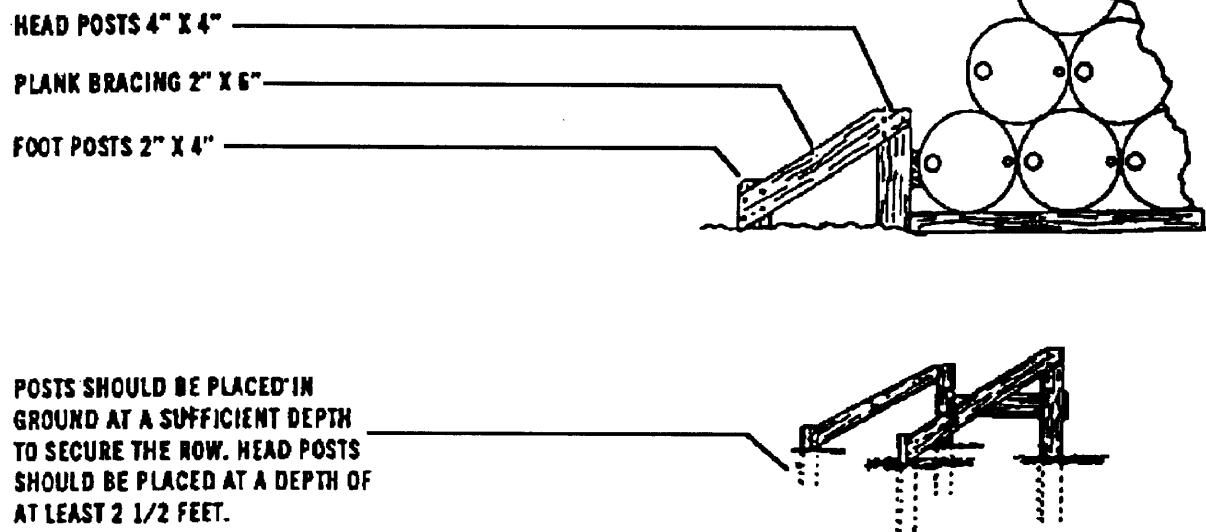


Figure I-2. Nested stack.

Dunnaged Stack

- Lay out a 70-foot square section, and then divide the section into units. If you are storing a small number of drums you may use a smaller square.
- Make a foundation for each unit of drums by laying out four 70-foot rows of 2- by 6-inch lumber or other suitable dunnage. Stand the lumber on edge, attaching cross braces between the rows to hold the lumber in place, as in figure I-3.
- Attach wooden cleats to the dunnage at the ends of each row (figure I-3).
- Build the first tier of the unit as described in the section on nested stacks.
- Place two double rows of 1-inch planks on top of the first tier. Then attach wooden cleats to the planks at the end of each row (figure I-3).
- Place a second tier on top of the first, and nest each drum between the two drums below it. Ensure that the bungs and vents are in a horizontal line and below the surface of the liquid. If you stack the drums in a pyramid (figure I-4), position them vertically, center them in the upper tier directly over those in the tier below.
- Build the third tier in the same way you built the second tier.



Dunnaged Stack

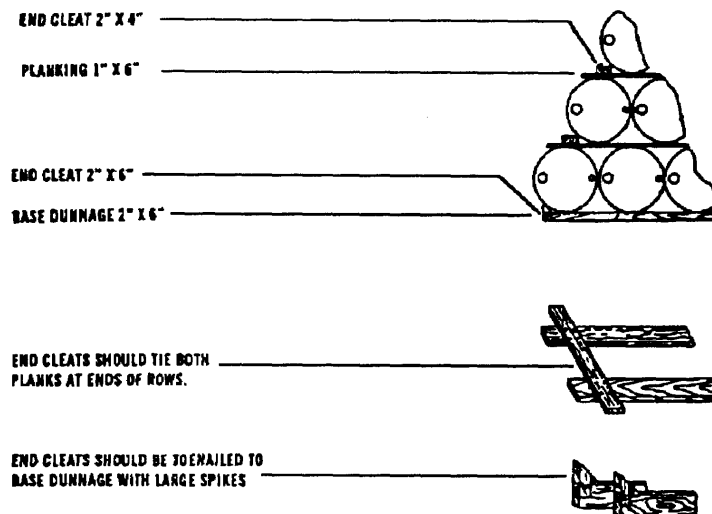


Figure I-3. Dunnaged stack.

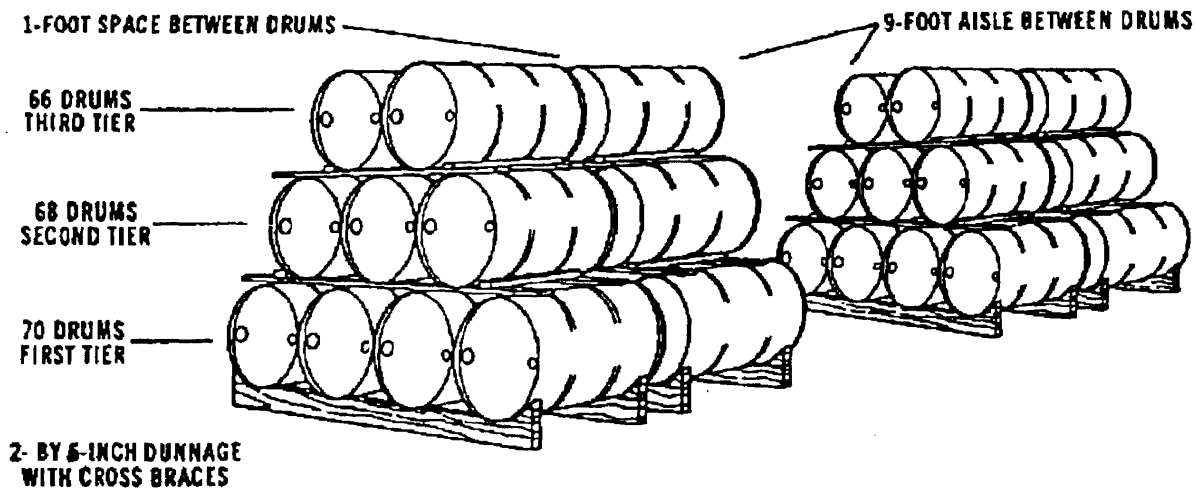


Figure I-4. Dunnaged stack of filled 55-gallon drums.

ISSUING PRODUCT

You must brace containers you load aboard transport vehicles to ensure their safe transit. Seal all closures tightly, and stow the containers on their bases. With 55-gallon drums, stow them with the bung and vent up. Your transport vehicle must be equipped with a fire extinguisher having a rating of 10-B-C or greater. Never exceed the load limit of a vehicle.